

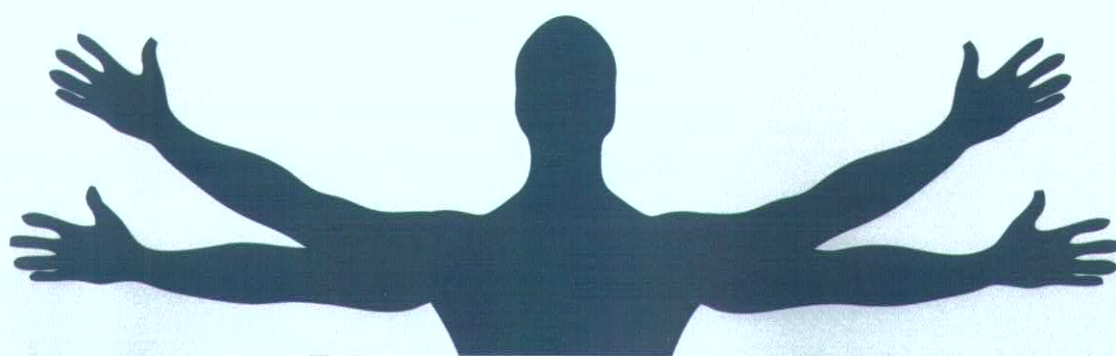
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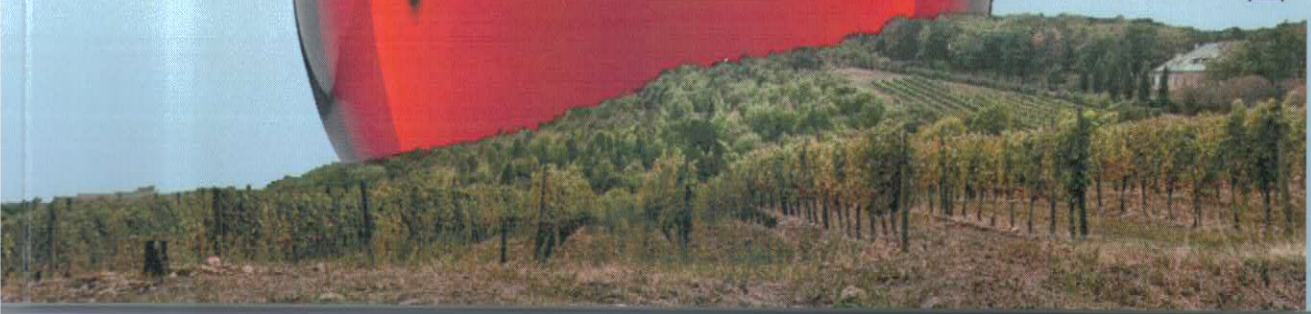
SLOVAK AND SERBIAN PHYSIOLOGICAL SOCIETIES

**HEALTH RISK,  
NUTRITION AND DIETARY SUPPLEMENTS:  
OXIDATIVE STRESS AND POLYPHENOLS IN  
THE HEART OF SERBIAN WINERIES**



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FINAL PROGRAM & ABSTRACT BOOK



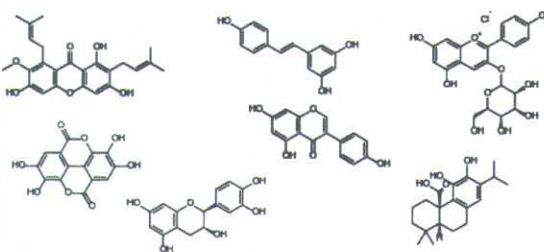
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SUPPLEMENTS: OXIDATIVE STRESS AND  
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*Organized by*  
SLOVAK PHYSIOLOGICAL SOCIETY  
SERBIAN PHYSIOLOGICAL SOCIETY

Under the auspices of

*Federation of European Physiological Societies (FEPS)*  
*International Union of Physiological Sciences (IUPS)*  
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**FINAL PROGRAM AND ABSTRACT BOOK**

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**LYTHRUM SALICARIA L. EXTRACTS AND THEIR PHENOLIC COMPOUNDS IN PREVENTION OF OXIDATIVE DNA DAMAGE**Sreckovic N<sup>1</sup>, Matic S<sup>2</sup>, Katanic J<sup>1</sup>, Stanic S<sup>2</sup>, Mihailovic V<sup>1</sup><sup>1</sup>*Department of Chemistry, Faculty of Science, University of Kragujevac, Kragujevac,*<sup>2</sup>*Department of Biology and Ecology, Faculty of Science, University of Kragujevac, Kragujevac, Serbia*

*Lithrum salicaria* L. (purple loosestrife) is a perennial herbaceous plant (family Lythraceae) traditionally used for treatment of diseases related to an inflammatory background. Phenolics, including C-glucosidic ellagitannins and C-glucosidic flavonoids, were reported as the main classes of compounds in *L. salicaria*. Our previous studies showed that *L. salicaria* aerial parts (LSA) and root (LSR) methanol extracts contain gallic, caffeic, chlorogenic, and ellagic acid and three flavone C-glucosides, orientin, isoorientin, and vitexin. Considering the high content of phenolics in *L. salicaria*, the aim of this study was to estimate the ability of LSA and LSR to protect DNA damage induced by hydroxyl and peroxy radicals. The DNA damage protective activity of LSA and LSR in a concentrations range of 25 to 400 µg/mL and phenolic compounds detected in these extracts (50 or 100 µg/mL) was assayed *in vitro* using DNA from herring sperm as a model system. Oxidative damage of DNA was generated by Fe<sup>2+</sup> and H<sub>2</sub>O<sub>2</sub>-induced hydroxyl radicals and 2,2'-azobis(2-amidinopropane) dihydrochloride (AAPH)-induced peroxy radicals. All applied concentrations of studied extracts and phenolic compounds were able to protect DNA against induced oxidative damage. The highest DNA protection showed extracts applied at concentrations of 25 and 50 µg/mL, while orientin and vitexin were the most effective in DNA oxidative protection among phenolic compounds identified in extracts. Obtained results indicate that tested extracts and phenolic compounds presented in these extracts may be used as natural antioxidants in pharmaceutical products with potential application to reduce oxidative stress in a living system.

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